

30-015-37615

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
CULEBRA BLV FEDERAL #1H
EDDY COUNTY, NM

Rig: PATRIOT #5

PathFinder Office Supervisor: FRANCISCO SINISTERRA

PathFinder Field Engineers: N. TVRDY

W. GRAHAM

B. RICHARD

J. OVERTON

Survey Calculations by RX5 V6.03 using Minimum Curvature

Survey Horiz. Reference: WELLHEAD

Ref Coordinates: LAT: 32.19.32.3501 N LON: 104.1.51.3418 W

GRID Reference: NAD83 new mexico east Transverse Mercator

Ref GRID Coord: X: 634746.8060 Y: 482336.4870

North Aligned To: GRID NORTH

Total Magnetic Correction: 7.79° EAST TO GRID

Vertical Section Plane: 92.11

Survey Vert. Reference: 26.50' Rotary Table To Ground

Altitude: 2944.00' Ground To MSL

Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
THE FOLLOWING ARE MS ENERGY GYROSCOPIC SURVEYS.										
200.00	1.25	348.71	199.99	0.00	-0.51	2.14 N	0.43 W	2.19@	348.69	0.00
** TIED INTO MS ENERGY GYROSCOPIC SURVEY AT 400'MD.										
400.00	1.00	223.17	399.97	200.00	-2.16	3.01 N	2.05 W	3.64@	325.74	1.00
THE FOLLOWING ARE PATHFINDER MWD SURVEYS.										
481.00	1.06	192.89	480.96	81.00	-2.76	1.76 N	2.70 W	3.23@	303.15	0.67
572.00	1.06	187.09	571.94	91.00	-2.99	0.11 N	2.99 W	2.99@	272.07	0.12
693.00	0.70	163.71	692.93	121.00	-2.86	1.71 S	2.92 W	3.39@	239.65	0.41
881.00	1.14	202.73	880.90	188.00	-3.15	4.54 S	3.32 W	5.63@	216.21	0.39
975.00	1.67	211.61	974.88	94.00	-4.16	6.57 S	4.40 W	7.91@	213.84	0.61
1069.00	0.44	220.22	1068.86	94.00	-5.06	8.01 S	5.35 W	9.63@	213.76	1.32
1164.00	0.88	247.47	1163.85	95.00	-5.94	8.57 S	6.26 W	10.61@	216.17	0.56
1258.00	1.76	237.27	1257.83	94.00	-7.78	9.63 S	8.14 W	12.61@	220.24	0.97
1352.00	1.06	252.21	1351.80	94.00	-9.79	10.67 S	10.19 W	14.75@	223.67	0.83
1446.00	1.32	240.79	1445.78	94.00	-11.53	11.47 S	11.96 W	16.57@	226.21	0.37
1540.00	0.18	34.33	1539.77	94.00	-12.38	11.87 S	12.82 W	17.47@	227.20	1.58
1635.00	0.44	6.82	1634.77	95.00	-12.27	11.39 S	12.69 W	17.05@	228.11	0.31
1729.00	0.53	325.25	1728.77	94.00	-12.50	10.67 S	12.90 W	16.74@	230.40	0.38
1823.00	0.53	325.87	1822.76	94.00	-13.02	9.95 S	13.39 W	16.68@	233.37	0.01
1917.00	0.35	58.50	1916.76	94.00	-13.03	9.44 S	13.39 W	16.39@	234.80	0.69
2012.00	0.79	112.91	2011.76	95.00	-12.18	9.55 S	12.54 W	15.76@	232.71	0.69
2106.00	1.41	113.26	2105.74	94.00	-10.49	10.26 S	10.88 W	14.95@	226.69	0.66
2200.00	0.26	342.30	2199.73	94.00	-9.49	10.51 S	9.88 W	14.43@	223.24	1.69
2294.00	0.53	130.66	2293.73	94.00	-9.22	10.59 S	9.62 W	14.30@	222.24	0.81
2389.00	1.14	120.47	2388.72	95.00	-8.05	11.36 S	8.47 W	14.17@	216.72	0.66
2483.00	0.70	153.60	2482.71	94.00	-6.95	12.34 S	7.41 W	14.40@	210.97	0.72
2589.00	0.97	135.67	2588.69	106.00	-5.99	13.57 S	6.49 W	15.04@	205.58	0.35

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
2732.00	0.97	136.29	2731.67	143.00	-4.24	15.31 S	4.81 W	16.04@	197.45	0.01
2920.00	1.06	134.09	2919.64	188.00	-1.81	17.67 S	2.46 W	17.84@	187.93	0.05
3108.00	0.97	189.46	3107.62	188.00	-0.72	20.45 S	1.47 W	20.50@	184.13	0.50
3297.00	1.14	22.47	3296.61	189.00	-0.27	20.29 S	1.02 W	20.31@	182.88	1.11
3484.00	1.23	24.67	3483.57	187.00	1.15	16.74 S	0.53 E	16.75@	178.19	0.05
3673.00	1.23	23.52	3672.52	189.00	2.66	13.04 S	2.19 E	13.22@	170.48	0.01
3861.00	1.32	21.94	3860.48	188.00	4.14	9.18 S	3.80 E	9.94@	157.52	0.05
4049.00	1.23	20.18	4048.43	188.00	5.50	5.28 S	5.31 E	7.48@	134.86	0.05
4237.00	1.06	14.21	4236.39	188.00	6.49	1.70 S	6.43 E	6.65@	104.81	0.11
4425.00	0.97	10.43	4424.36	188.00	7.08	1.55 N	7.14 E	7.31@	77.75	0.06
4613.00	0.88	11.31	4612.34	188.00	7.54	4.53 N	7.71 E	8.95@	59.57	0.05
4800.00	0.70	15.35	4799.32	187.00	8.03	7.04 N	8.30 E	10.88@	49.69	0.10
4988.00	0.44	36.53	4987.31	188.00	8.70	8.73 N	9.03 E	12.56@	45.98	0.18
5177.00	0.53	32.84	5176.31	189.00	9.56	10.05 N	9.94 E	14.13@	44.69	0.05
5364.00	0.44	327.10	5363.30	187.00	9.59	11.38 N	10.02 E	15.16@	41.37	0.28
5422.00	0.44	338.64	5421.30	58.00	9.38	11.77 N	9.82 E	15.33@	39.82	0.15
5453.00	0.88	52.91	5452.30	31.00	9.51	12.02 N	9.96 E	15.61@	39.64	2.81
5485.00	2.99	73.06	5484.28	32.00	10.49	12.42 N	10.96 E	16.56@	41.43	6.83
5516.00	7.21	76.13	5515.15	31.00	13.13	13.12 N	13.62 E	18.91@	46.07	13.64
5547.00	11.87	77.00	5545.71	31.00	18.08	14.30 N	18.62 E	23.48@	52.47	15.04
5579.00	16.00	78.29	5576.76	32.00	25.54	15.94 N	26.15 E	30.62@	58.63	12.94
5610.00	19.08	81.31	5606.32	31.00	34.67	17.57 N	35.34 E	39.47@	63.56	10.36
5641.00	22.25	84.79	5635.32	31.00	45.47	18.87 N	46.20 E	49.90@	67.78	10.96
5673.00	25.24	85.88	5664.61	32.00	58.26	19.91 N	59.04 E	62.31@	71.36	9.44
5704.00	27.79	86.38	5692.35	31.00	72.03	20.84 N	72.84 E	75.77@	74.03	8.26
5736.00	29.81	87.77	5720.39	32.00	87.38	21.62 N	88.24 E	90.85@	76.23	6.65
5767.00	32.10	90.34	5746.97	31.00	103.30	21.87 N	104.18 E	106.45@	78.14	8.53
5799.00	34.29	93.09	5773.75	32.00	120.82	21.34 N	121.68 E	123.54@	80.05	8.30
5830.00	35.96	94.81	5799.10	31.00	138.64	20.10 N	139.48 E	140.92@	81.80	6.26

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5862.00	39.04	95.31	5824.49	32.00	158.09	18.38 N	158.88 E	159.94@	83.40	9.67
5893.00	41.77	94.61	5848.09	31.00	178.16	16.65 N	178.89 E	179.67@	84.68	8.93
5925.00	45.29	93.66	5871.29	32.00	200.18	15.07 N	200.87 E	201.44@	85.71	11.19
5956.00	48.36	93.01	5892.50	31.00	222.78	13.75 N	223.44 E	223.86@	86.48	10.02
5987.00	51.53	92.55	5912.44	31.00	246.51	12.61 N	247.14 E	247.46@	87.08	10.29
6019.00	54.52	92.60	5931.69	32.00	272.07	11.46 N	272.67 E	272.91@	87.59	9.34
6050.00	57.24	93.27	5949.08	31.00	297.72	10.14 N	298.30 E	298.47@	88.05	8.96
6081.00	59.09	93.77	5965.43	31.00	324.05	8.52 N	324.59 E	324.70@	88.50	6.12
6113.00	61.99	93.71	5981.16	32.00	351.90	6.71 N	352.39 E	352.45@	88.91	9.06
6144.00	64.63	93.43	5995.09	31.00	379.59	4.98 N	380.03 E	380.06@	89.25	8.55
6175.00	68.24	93.09	6007.48	31.00	407.99	3.37 N	408.39 E	408.40@	89.53	11.69
6207.00	70.43	93.35	6018.77	32.00	437.92	1.69 N	438.28 E	438.29@	89.78	6.89
6238.00	72.81	93.38	6028.54	31.00	467.33	0.04 S	467.65 E	467.65@	90.01	7.68
6270.00	74.74	93.02	6037.48	32.00	498.05	1.76 S	498.32 E	498.33@	90.20	6.13
6301.00	77.21	91.61	6045.00	31.00	528.12	2.97 S	528.37 E	528.38@	90.32	9.11
6331.00	79.49	90.41	6051.05	30.00	557.50	3.49 S	557.75 E	557.76@	90.36	8.55
6363.00	82.75	89.41	6055.99	32.00	589.09	3.43 S	589.36 E	589.37@	90.33	10.65
6394.00	86.70	89.72	6058.84	31.00	619.92	3.20 S	620.22 E	620.23@	90.30	12.78
6425.00	87.85	89.73	6060.32	31.00	650.86	3.05 S	651.18 E	651.19@	90.27	3.71
6456.00	88.81	89.94	6061.22	31.00	681.82	2.96 S	682.17 E	682.18@	90.25	3.17
6486.00	89.25	89.55	6061.73	30.00	711.79	2.83 S	712.17 E	712.17@	90.23	1.96
6561.00	89.96	90.29	6062.25	75.00	786.73	2.72 S	787.16 E	787.17@	90.20	1.37
6656.00	90.31	91.75	6062.02	95.00	881.71	4.42 S	882.15 E	882.16@	90.29	1.58
6750.00	89.60	90.13	6062.10	94.00	975.69	5.96 S	976.13 E	976.15@	90.35	1.88
6844.00	88.72	90.68	6063.47	94.00	1069.63	6.62 S	1070.12 E	1070.14@	90.35	1.10
6938.00	88.46	91.47	6065.79	94.00	1163.59	8.38 S	1164.07 E	1164.10@	90.41	0.88
7033.00	89.43	90.88	6067.54	95.00	1258.56	10.33 S	1259.03 E	1259.07@	90.47	1.19
7127.00	88.02	92.93	6069.63	94.00	1352.53	13.46 S	1352.95 E	1353.02@	90.57	2.65
7221.00	88.99	92.52	6072.08	94.00	1446.49	17.92 S	1446.81 E	1446.92@	90.71	1.12

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7315.00	88.81	92.69	6073.88	94.00	1540.47	22.19 S	1540.70 E	1540.86@	90.83	0.26
7409.00	88.99	93.42	6075.69	94.00	1634.44	27.20 S	1634.54 E	1634.77@	90.95	0.80
7504.00	89.25	93.35	6077.15	95.00	1729.40	32.81 S	1729.37 E	1729.68@	91.09	0.28
7598.00	88.29	93.66	6079.17	94.00	1823.35	38.56 S	1823.17 E	1823.58@	91.21	1.07
7692.00	89.34	91.53	6081.11	94.00	1917.32	42.81 S	1917.04 E	1917.52@	91.28	2.53
7787.00	88.37	91.84	6083.01	95.00	2012.30	45.60 S	2011.98 E	2012.50@	91.30	1.07
7882.00	89.08	89.94	6085.12	95.00	2107.25	47.08 S	2106.94 E	2107.47@	91.28	2.13
7975.00	90.66	90.65	6085.33	93.00	2200.20	47.56 S	2199.94 E	2200.45@	91.24	1.86
8069.00	91.63	89.45	6083.46	94.00	2294.12	47.64 S	2293.92 E	2294.41@	91.19	1.64
8163.00	90.84	90.06	6081.43	94.00	2388.01	47.24 S	2387.89 E	2388.36@	91.13	1.06
8258.00	91.10	88.12	6079.82	95.00	2482.86	45.73 S	2482.86 E	2483.28@	91.06	2.06
8352.00	90.40	89.26	6078.59	94.00	2576.69	43.58 S	2576.83 E	2577.20@	90.97	1.42
8446.00	91.10	88.12	6077.36	94.00	2670.51	41.43 S	2670.79 E	2671.12@	90.89	1.42
8540.00	90.40	88.91	6076.13	94.00	2764.31	39.00 S	2764.75 E	2765.03@	90.81	1.12
8609.00	90.84	88.25	6075.38	69.00	2833.18	37.29 S	2833.73 E	2833.97@	90.75	1.15
8703.00	90.22	88.56	6074.51	94.00	2926.98	34.67 S	2927.69 E	2927.89@	90.68	0.74
8797.00	90.48	89.30	6073.94	94.00	3020.83	32.92 S	3021.67 E	3021.85@	90.62	0.83
8891.00	90.31	89.11	6073.29	94.00	3114.71	31.61 S	3115.66 E	3115.82@	90.58	0.27
8984.00	90.48	88.90	6072.65	93.00	3207.57	30.00 S	3208.64 E	3208.78@	90.54	0.29
9078.00	90.48	91.22	6071.86	94.00	3301.50	30.09 S	3302.63 E	3302.77@	90.52	2.47
9172.00	90.31	91.22	6071.21	94.00	3395.48	32.10 S	3396.61 E	3396.76@	90.54	0.18
9266.00	90.13	91.73	6070.85	94.00	3489.48	34.52 S	3490.57 E	3490.74@	90.57	0.57
9361.00	90.57	92.30	6070.27	95.00	3584.48	37.86 S	3585.51 E	3585.71@	90.60	0.76
9455.00	91.01	92.47	6068.98	94.00	3678.47	41.77 S	3679.42 E	3679.66@	90.65	0.50
9549.00	90.13	92.99	6068.04	94.00	3772.45	46.24 S	3773.31 E	3773.59@	90.70	1.09
9644.00	90.31	92.82	6067.68	95.00	3867.44	51.06 S	3868.19 E	3868.52@	90.76	0.26
9738.00	90.57	93.15	6066.96	94.00	3961.43	55.95 S	3962.06 E	3962.45@	90.81	0.45
9832.00	90.57	93.25	6066.02	94.00	4055.41	61.20 S	4055.90 E	4056.37@	90.86	0.11
9926.00	90.66	93.21	6065.01	94.00	4149.39	66.50 S	4149.75 E	4150.28@	90.92	0.10

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10020.00	90.75	93.41	6063.85	94.00	4243.36	71.92 S	4243.59 E	4244.20@	90.97	0.23
10115.00	90.13	93.58	6063.13	95.00	4338.33	77.71 S	4338.41 E	4339.10@	91.03	0.68
10209.00	90.04	93.08	6062.99	94.00	4432.30	83.18 S	4432.25 E	4433.03@	91.08	0.54
10303.00	90.13	91.99	6062.85	94.00	4526.30	87.33 S	4526.15 E	4527.00@	91.11	1.16
10398.00	90.13	92.11	6062.63	95.00	4621.30	90.73 S	4621.09 E	4621.98@	91.12	0.13
10493.00	89.96	92.71	6062.56	95.00	4716.30	94.73 S	4716.01 E	4716.96@	91.15	0.66
10541.00	90.04	92.55	6062.56	48.00	4764.30	96.93 S	4763.96 E	4764.94@	91.17	0.37
10636.00	90.66	92.56	6061.98	95.00	4859.29	101.16 S	4858.86 E	4859.91@	91.19	0.65
10730.00	88.90	91.42	6062.34	94.00	4953.28	104.43 S	4952.80 E	4953.90@	91.21	2.23
10824.00	89.60	92.25	6063.57	94.00	5047.27	107.44 S	5046.74 E	5047.88@	91.22	1.15
10918.00	90.57	91.98	6063.43	94.00	5141.27	110.91 S	5140.67 E	5141.87@	91.24	1.07
11013.00	90.66	92.55	6062.41	95.00	5236.27	114.66 S	5235.60 E	5236.85@	91.25	0.61
11107.00	91.28	92.99	6060.82	94.00	5330.25	119.20 S	5329.47 E	5330.80@	91.28	0.81
11201.00	90.48	92.65	6059.37	94.00	5424.23	123.83 S	5423.35 E	5424.76@	91.31	0.93
11295.00	89.87	92.78	6059.09	94.00	5518.22	128.28 S	5517.24 E	5518.73@	91.33	0.66
11390.00	89.34	92.18	6059.74	95.00	5613.22	132.39 S	5612.15 E	5613.71@	91.35	0.84
11485.00	89.16	91.31	6060.98	95.00	5708.20	135.28 S	5707.09 E	5708.70@	91.36	0.93
11579.00	89.78	91.14	6061.85	94.00	5802.19	137.29 S	5801.07 E	5802.69@	91.36	0.68
11609.00	88.90	91.55	6062.20	30.00	5832.18	138.00 S	5831.06 E	5832.69@	91.36	3.24
11642.00	87.41	90.94	6063.26	33.00	5865.16	138.71 S	5864.03 E	5865.67@	91.36	4.88
11673.00	86.17	90.05	6065.00	31.00	5896.10	138.98 S	5894.98 E	5896.62@	91.35	4.92
11701.00	86.70	90.28	6066.74	28.00	5924.03	139.06 S	5922.93 E	5924.56@	91.34	2.06
11736.00	87.76	89.88	6068.43	35.00	5958.97	139.11 S	5957.88 E	5959.51@	91.34	3.24
11767.00	88.72	90.77	6069.38	31.00	5989.94	139.28 S	5988.87 E	5990.49@	91.33	4.22
11799.00	89.25	91.34	6069.95	32.00	6021.93	139.87 S	6020.86 E	6022.48@	91.33	2.43
11830.00	88.55	91.20	6070.54	31.00	6052.92	140.56 S	6051.84 E	6053.48@	91.33	2.30
11861.00	87.14	89.89	6071.71	31.00	6083.88	140.86 S	6082.82 E	6084.45@	91.33	6.21
11893.00	87.23	89.60	6073.28	32.00	6115.82	140.71 S	6114.78 E	6116.40@	91.32	0.95
11925.00	87.76	89.54	6074.68	32.00	6147.75	140.47 S	6146.75 E	6148.35@	91.31	1.67

PathFinder Energy Services, Inc.

Survey Report

YATES PETROLEUM CORPORATION
CULEBRA BLV FEDERAL #1H
EDDY COUNTY, NM
RIG: PATRIOT #5

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Measured Depth (ft)	Incl (deg)	Drift Dir. (deg)	TVD (ft)	Course Length (ft)	Vertical Section (ft)	TOTAL Rectangular Offsets (ft) (ft)		Closure Dist Dir (ft) (deg)		DLS (dg/100ft)
11956.00	87.67	88.71	6075.92	31.00	6178.69	140.00 S	6177.72 E	6179.31@	91.30	2.69
11988.00	87.49	88.30	6077.27	32.00	6210.59	139.17 S	6209.68 E	6211.24@	91.28	1.40
12019.00	89.08	89.21	6078.20	31.00	6241.53	138.49 S	6240.66 E	6242.19@	91.27	5.91
12051.00	89.52	89.84	6078.59	32.00	6273.49	138.23 S	6272.65 E	6274.18@	91.26	2.40
12082.00	87.58	88.59	6079.37	31.00	6304.44	137.80 S	6303.64 E	6305.15@	91.25	7.44
12113.00	88.55	88.19	6080.42	31.00	6335.36	136.93 S	6334.61 E	6336.09@	91.24	3.38
12145.00	89.78	87.84	6080.88	32.00	6367.27	135.82 S	6366.59 E	6368.03@	91.22	4.00
12176.00	88.11	87.90	6081.45	31.00	6398.18	134.67 S	6397.56 E	6398.98@	91.21	5.39
12208.00	88.55	87.36	6082.39	32.00	6430.07	133.35 S	6429.52 E	6430.90@	91.19	2.18
12239.00	89.60	88.14	6082.89	31.00	6460.97	132.13 S	6460.49 E	6461.84@	91.17	4.22
12270.00	87.32	87.75	6083.72	31.00	6491.88	131.02 S	6491.46 E	6492.78@	91.16	7.46
12301.00	86.70	87.70	6085.34	31.00	6522.74	129.79 S	6522.39 E	6523.68@	91.14	2.01
12333.00	86.79	87.80	6087.15	32.00	6554.60	128.54 S	6554.31 E	6555.57@	91.12	0.42
12364.00	86.53	88.45	6088.96	31.00	6585.47	127.53 S	6585.24 E	6586.48@	91.11	2.25
12427.00	87.49	88.49	6092.25	63.00	6648.26	125.85 S	6648.13 E	6649.33@	91.08	1.52
12458.00	88.46	89.44	6093.34	31.00	6679.19	125.29 S	6679.11 E	6680.28@	91.07	4.38
12490.00	88.90	90.10	6094.08	32.00	6711.16	125.16 S	6711.10 E	6712.27@	91.07	2.48
12521.00	88.20	90.50	6094.86	31.00	6742.13	125.32 S	6742.09 E	6743.25@	91.06	2.60
12615.00	88.72	89.68	6097.39	94.00	6836.04	125.47 S	6836.05 E	6837.21@	91.05	1.03
12707.00	89.34	88.56	6098.95	92.00	6927.90	124.06 S	6928.03 E	6929.14@	91.03	1.39
12739.00	88.72	89.29	6099.49	32.00	6959.84	123.46 S	6960.02 E	6961.11@	91.02	2.99
STRAIGHT LINE PROJECTION TO BIT DEPTH AT 12805' MD.										
12805.00	88.72	89.29	6100.96	66.00	7025.75	122.64 S	7026.00 E	7027.07@	91.00	0.00

** The survey data at tie-in point was furnished by a recognized survey company and entered as submitted. Survey stations above the tie-in point represent recalculated data by PathFinder Energy Services, Inc. and may reflect minor changes due to rounding differences between survey programs. Only survey stations taken by qualified PathFinder personnel are subject to certification.



Job Number: 101117505242
 Company: Yates Petroleum
 Lease/Well: Culebra BLV Federal 1H
 Location: Eddy County, NM
 Rig Name: Patriot #5
 RKB: 26'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 7.79°
 Grid: East To Grid
 File name: F:\SURVEY\2010SU~1\YATESP~1\CULEBR1H.SVY
 Date/Time: 29-Mar-10 / 09:49
 Curve Name: Surface - 400' M.D. (gyroscopic)

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane 92.11
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
 Surface MD to 400' MD is, to the best of
 our knowledge a true and accurate account of the
 well bore.
 Dana Jutte 3/29/10
 MS Energy Services Date

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
200.00	1.25	348.71	199.98	2.14	-.43	-.51	2.18	348.71	.62
Last Survey Depth Recorded									
400.00	1.00	223.17	399.97	3.01	-2.05	-2.16	3.64	325.73	1.00